New Features in PBS

Category: Running Jobs with PBS

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This article is being reviewed for completeness and technical accuracy.

Some of the new features relevant to users are listed below:

- Estimate job start times (version 10.4)

  PBS can estimate the start time for jobs. To show the estimated start times (in the *Est Start* field), use

  ```
  %qstat –T
  ```

  ```
  This feature is still under testing by NAS system
  administrators and is not yet available to users.
  ```

- Show the processor model (version 10.4)

  Processor model (for example, Harpertwon, Nehalem-EP, and Westmere-EP) can be displayed with

  ```
  %qstat –W o=+model
  ```

- Show job history (version 10.1)

  Use the PBS "-x" option to obtain job history information, including the submission parameters, start/end time, resources used, etc., for jobs that finished execution, were deleted or are still running.

  The job history for finished jobs is preserved for a specific duration. After the duration has expired, PBS deletes the job history information and it is no longer available. Currently, the duration is set to be **7 days** on Pleiades.

  ```
  %qstat –fx job_id
  ```

- Advance and Standing reservations (version 9.2)

An advance reservation can be made for a set of resources for a specified time. The reservation is only available to a specific user or group of users.

A standing reservation is an advance reservation which recurs at specified times. For example, the user can reserve 8 nodes every Wednesday from 5pm to 8pm, for the next month.

The reservation is made using the "pbs_rsub" command. PBS either confirms that the reservation can be made, or rejects the request. Once he reservation is confirmed, PBS creates a queue for the reservation's jobs. Jobs are then submitted to this queue.

The following example shows the creation of an advance reservation asking for 1 node with 8 cpus, a start time of 11:30 and a duration of 30 minutes.

```
%pbs_rsub -R 1130 -D 00:30:00 -l select=1:ncpus=8
```

A reservation can be deleted using the "pbs_rdel" command.

For more information, see **man pbs_rsub** and **man pbs_rdel**.

```
Requests to use advance and standing reservations must be
approved by NAS management. Only staff with special privilege
can create the reservations for users.
```